

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (currently amended) ~~A method~~ One or more computer-storage media having computer-useable instructions embodied thereon for performing a method for identifying optimal mapping of logical links to the physical topology of a network, the method comprising:

obtaining one or more mapping options for mapping multiple logical links between two or more pairs of network nodes onto physical paths that are at least relatively disjoint;

obtaining a priority order of the network node pairs, the priority order derived from network traffic carried between the network node pairs; and

correlating the mapping options with the priority order of the network nodes to identify optimal mapping of logical links to the physical topology of a network.
2. (currently amended) The ~~method~~ media of claim 1, wherein the method further comprises [ing]:

obtaining the availability of wavelengths in the network.
3. (currently amended) The ~~method~~ media of claim 2, further comprising:

correlating the mapping options with the maximum time delay, and the wavelength availability to identify optimal mapping of logical links to the physical topology of a network.

4. (currently amended) The ~~method-media~~ of claim 2, wherein the method further comprises[ing]:

obtaining the maximum time delay allowed between each network node pair.

5. (currently amended) The ~~method-media~~ of claim 4, wherein the method further comprises[ing]:

obtaining the relative time delay allowed between two or more physical paths.

6. (cancelled)

7. (currently amended) The ~~method-media~~ of claim 1, wherein the correlation is performed using an integer linear program.

8. (currently amended) The ~~method-media~~ of claim 1, wherein the correlation is performed using a Tabu search methodology.

9. (currently amended) The ~~method-media~~ of claim 1, wherein the correlation is performed to identify the optimal mapping for a large Internet network backbone.

10. (cancelled)

11. (currently amended) A computer system for identifying optimal mapping of logical links onto the physical topology of a network, the system comprising:

a practical constraint module comprising a mapping option sub-module for obtaining mapping options for multiple logical links between two or more pairs of

network nodes onto physical paths that are at least relatively disjoint and network node priority sub-module for obtaining a priority order of the network nodes derived from network traffic carried from the network nodes; and

a correlation module coupled with the practical constraint module for correlating the mapping options with the network node priority order to identify and store optimal mapping of logical links to the physical topology of a network.

12. (original) The computer system of claim 11, wherein the practical constraint module further comprises:

a wavelength submodule for obtaining wavelength availability in a network.

13. (original) The computer system of claim 12, wherein the correlation module correlates the mapping options with the network node priority and wavelength availability.

14. (currently amended) A system for identifying optimal mapping of logical links to the physical topology of a network, the system comprising:

means for obtaining one or more mapping options for mapping multiple logical links between two or more pairs of network nodes onto physical paths that are at least relatively disjoint;

means for obtaining a priority order of the network nodes utilizing network traffic carried from the network nodes; and

means for correlating the mapping options with the priority order of the network nodes to identify optimal mapping of logical links to the physical topology of a network.

15. (original) The system of claim 14, further comprising:
means for obtaining the availability of wavelengths in the network.

16. (original) The system of claim 15, further comprising:
means for correlating the mapping options with the maximum time delay, the relative time delay and the wavelength availability to identify optimal mapping of logical links to the physical topology of a network